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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,007	09/29/2003	John E. Longnecker	DDC 0559 PUS/02-1-127	2390
22045	7590	05/25/2004	EXAMINER	
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			TRIEU, THAI BA	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/674,007	<b>Applicant(s)</b> LONGNECKER ET AL.	
	<b>Examiner</b> Thai-Ba Trieu	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-3 and 11-16 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09/29/03</u> . | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

### DETAILED ACTION

This Office Action is in response to the Election Requirement field on April 29, 2004. Applicants provisionally elected Group II (Claims 4-10) with traverse, for being examined on the merits.

After reconsidering the applicants' argument set forth on Pages 1-2, filed on April 29, 2004, the examiner respectfully disagreed with applicants. Even though, in general, the inventions II, III and V are related to control internal combustion engine incorporating with the adjustment VGT, each invention has different input sensors to represent different method of controlling and functioning internal combustion engine. It is not necessary for one internal combustion engine can be controlled with different methods at the same time. Accordingly, only Claims 4-10 are being examined on their merits.

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- The recitations of "***vanes to a first extend***", and "***vanes to a second extend***" (See Claims 6 and 9, lines 5 and 7) need to be incorporated with the specification.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims **6 and 9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

- The recitations of ***"vanes to a first extend", "vanes to a second extend",*** and ***"the second extend being less open than the first extend"*** render the claims indefinite, since it is not clear that how big opening/angle of the vane to be opened or closed to the first extend and to the second extend, and how less the second extend is open if compared to the first extend. Applicant should clarify the first and the second extends of the vanes.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Moody et al. (Patent Number 4,671,068).***

Moody disclose a method for controlling an internal combustion engine having a variable geometry turbocharger (VGT) (10) to provide a boost pressure at an engine intake, the VGT having a boost pressure sensor, the method comprising:

calculating a feedforward VGT geometry command to provide a desired boost pressure (See Column 1, lines 59-68, and Column 2, lines 1-6);

monitoring whether the boost pressure sensor has failed (via 128) (See Figure 2);

calculating an adjusted VGT geometry command based at least partially on feedback from the boost pressure sensor, wherein the adjusted command comprises an adjustment to the feedforward command, and setting the VGT geometry according to the adjusted command, if the boost pressure sensor has not failed (See Figure 3; Column 3, lines 16-68, and Column 4, lines 1-68, and Column 5, lines 1-56);

setting the VGT geometry according to the feedforward command, if the boost pressure sensor has failed (See Column 7, lines 62-68, and Column 8, lines 1-26);

wherein the feedforward VGT geometry command being calculated from an engine speed and a demanded engine torque (See Column 2, lines 13-17);

wherein the VGT is a variable nozzle turbocharger (10) having movable vanes (20) to vary the geometry;

the feedforward VGT geometry command is expressed as a command to open the vanes to a first extent; and

the adjusted VGT geometry command is expressed as a command to open the vanes to a second extent (Column 2, lines 46-59; Column 3, lines ).

***Claims 4-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Weisman, II et al. (Patent Number 5,987,888).***

**Regarding claims 4-5,** Weisman, II et al. disclose a method for controlling an internal combustion engine having a variable geometry turbocharger (VGT) (50) to provide a boost pressure at an engine intake, the VGT having a boost pressure sensor (20), the method comprising:

- calculating a feedforward VGT geometry command to provide a desired boost pressure;

- monitoring whether the boost pressure sensor has failed;

- calculating an adjusted VGT geometry command based at least partially on feedback from the boost pressure sensor, wherein the adjusted command comprises an adjustment to the feedforward command, and setting the VGT geometry according to the adjusted command, if the boost pressure sensor has not failed;

- setting the VGT geometry according to the feedforward command, if the boost pressure sensor has failed (See Column 8, lines 1-26 and 38-48);

- wherein the feedforward VGT geometry command is calculated from an engine speed and a demanded engine torque (See Column 2, lines 59-63, Column 8, lines 49-67).

**Regarding claims 7-8 and 10,** Weisman, II et al. discloses a method for controlling an internal combustion engine having a variable geometry turbocharger (VGT) to provide a boost pressure at an engine intake, the turbocharger having a

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turbine shaft, a boost pressure sensor, and a turbo speed sensor for measuring a rotational speed of the turbine shaft, the method comprising:

- calculating a feedforward VGT geometry command to provide a desired boost pressure;

- calculating an adjusted VGT geometry command based at least partially on feedback from the boost pressure sensor, wherein the adjusted command comprises an adjustment to the feedforward command;

- monitoring whether the turbo speed sensor has failed;

- setting the VGT geometry according to the adjusted command, if the turbo speed sensor has not failed;

- setting the VGT geometry according to the adjusted command if the adjustment to the feedforward command would not increase the rotational speed of the turbine shaft, and setting the VGT geometry according to the feedforward command if the adjustment to the feedforward command would increase the rotational speed of the turbine shaft, if the turbo speed sensor has failed (See Column 6, lines 65-67, and Columns 7-8);

- wherein the feedforward VGT geometry command is calculated from an engine speed and a demanded engine torque; and limiting a maximum available engine torque, if the turbo speed sensor has failed (See Column 9, lines 1-68, and Column 10, lines 1-46).

### ***Conclusion***

The IDS (PTO-1449) filed on September 29, 2003 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Buckland et al. (US Patent Number 6,672,060 B1) disclose a coordinated control of electronic throttle and variable geometry turbocharger in boosted stoichiometric spark ignition engines.

- Wang et al. (US Patent Number 6,619,261 B1) disclose a system for controlling an operating condition of an internal combustion engine.

- Waszkiewicz et al. (US Patent Number 6,360,541 B2) disclose an intelligent electric actuator for control of a turbocharger with an integrated exhaust gas recirculation valve.

- Barnes et al. (US Patent Number 6,272,859 B1) disclose a device for controlling a variable geometry turbocharger.

- Markyvech et al. (US Patent Number 6,134,889) disclose a variable geometry turbocharging system and method.

- Dellora (US Patent Number 5,440,879) discloses an electronic control system for the speed of rotation of a variable geometry turbocompressor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB  
May 17, 2004



Thai-Ba Trieu  
Patent Examiner  
Art Unit 3748